

*FUNCTIONAL ANALYSIS OF ABERRANT BEHAVIOR
THROUGH MEASUREMENT OF SEPARATE
RESPONSE TOPOGRAPHIES*

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Functional analysis results for multiple topographies of aberrant behavior were graphed in an aggregate fashion and then separately for 48 clients. The results indicated that multiple topographies of behavior may be maintained by different contingencies. These results indicate that graphing functional analysis data in an aggregate fashion and then separately may improve the accuracy of their interpretation.

DESCRIPTORS: aberrant behavior, data interpretation, functional analysis

Functional analysis (Iwata, Dorsey, Slifer, Bauman, & Richman, 1982/1994) has proven to be an effective assessment procedure for identifying the operant mechanisms that maintain aberrant behavior. Many individuals may present with multiple topographies of aberrant behavior, which raises the possibility that not all topographies are maintained by the same contingency. To fully understand the function of each topography, individual functional analyses would ideally be conducted. This is rarely done due to practical constraints. As an alternative, Derby et al. (1994) suggested conducting a single functional analysis of multiple aberrant behaviors and then analyzing the data when graphed in an aggregate fashion and as separate response topographies. This strategy may (a) reduce the time and cost involved in analyzing multiple topographies and (b) reduce the occurrence of inconclusive outcomes. In the

current investigation, we extended the results of Derby et al. by determining the extent to which assessment results varied across topographies through an examination of results for a large number of clients using Derby et al.'s procedures.

METHOD

Participants and Setting

Participants were 48 clients who had been admitted to an inpatient unit for severe problem behavior. There were 31 males (65%) and 17 females (35%), whose ages ranged from 3 to 32 years. Prominent diagnoses included severe to profound mental retardation (80%) and seizure disorder (25%). For the majority of clients, sessions were conducted in a room (3 m by 3 m) equipped with a one-way mirror that permitted unobtrusive observation.

Data Collection

Individualized operational definitions were developed for each client's topography of aberrant behavior. One client had five dif-

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ferent topographies, 8 clients had four topographies, 32 clients had three topographies, and 7 clients had two topographies. Trained observers recorded each occurrence of self-injury (SIB), aggression, destruction, and other aberrant behaviors separately. The percentage of sessions in which interobserver agreement was assessed ranged from 6% to 100% ($M = 57\%$) across clients. Exact agreement coefficients for the 48 clients averaged 97%, 98%, 96%, and 98% for SIB, aggression, destruction, and other aberrant behaviors, respectively.

Functional Analysis Procedures

Functional analyses were completed using procedures described by Iwata *et al.* (1982/1994). Sessions consisted of a control condition (play) and two to four experimental conditions (escape, alone, attention, and tangible). All analyses included the play, attention, and escape conditions. If the *a priori* hypothesis suggested an automatic or a tangible function, an alone condition or tangible condition was included, respectively. For all clients, the functional analyses contained 10 sessions in each condition independent of clarity of the data trends. For some clients, more than 10 sessions per condition were conducted for reasons unrelated to this study, but only the first 10 sessions from each condition were used for data interpretation. The specific conditions completed for each client varied depending on the presenting problem and client history. Of the clients included in this study, 38 were also participants in the Hagopian *et al.* (1997) investigation.

Data Interpretation

Aberrant behavior was analyzed by graphing aggregate and separate response topographies (Derby *et al.*, 1994). The graphs were then interpreted via visual inspection using criteria developed by Hagopian *et al.* (1997). Two independent raters interpreted

the functional analyses for aggregate and separate response topographies for all 48 clients. Agreement was determined by dividing the number of exact interpretation agreements by the number of interpretation agreements plus disagreements and multiplying by 100%. An exact agreement was defined as both raters identifying the same function for both aggregate and separate topographies of aberrant behavior. Interrater agreement was 91%.

RESULTS AND DISCUSSION

The results obtained by comparing graphs of aggregate and separate response topographies identified matching functions for only 29% ($n = 14$) of the clients. For these individuals, all topographies of aberrant behavior were elevated in the same condition as aggregate behavior suggesting the same function. An example of this outcome is shown in Figure 1. The results for Client 1 suggest an attention function for all topographies aggregated (top panel), as well as when aggression (second panel) and disruption (third panel) were graphed separately. Dangerous acts (bottom panel) occurred at low rates in all conditions but still suggested an attention function.

Graphing each topography separately allowed us to identify an additional maintaining contingency for a specific topography for 25% ($n = 12$) of the clients. For these clients, one or more separate responses occurred most often in a condition other than the condition in which aggregate behavior occurred most often. For example, an escape function was identified when topographies were aggregated (Figure 2, top panel) and for destruction when graphed separately (bottom panel) for Client 19. SIB, however, was maintained by access to tangible items (second panel).

For the remaining clients (46%), the

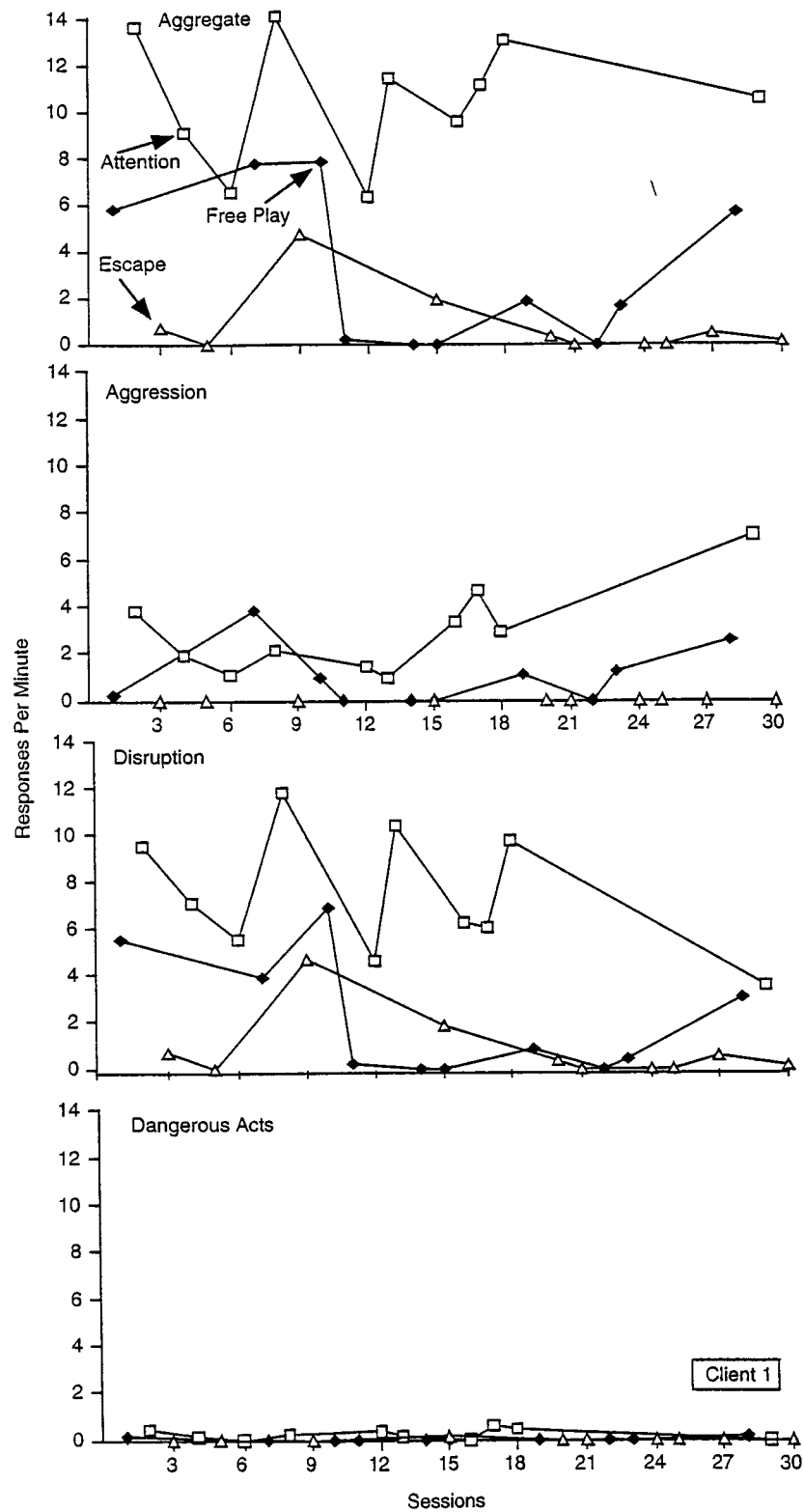


Figure 1. Functional analysis results for Client 1.

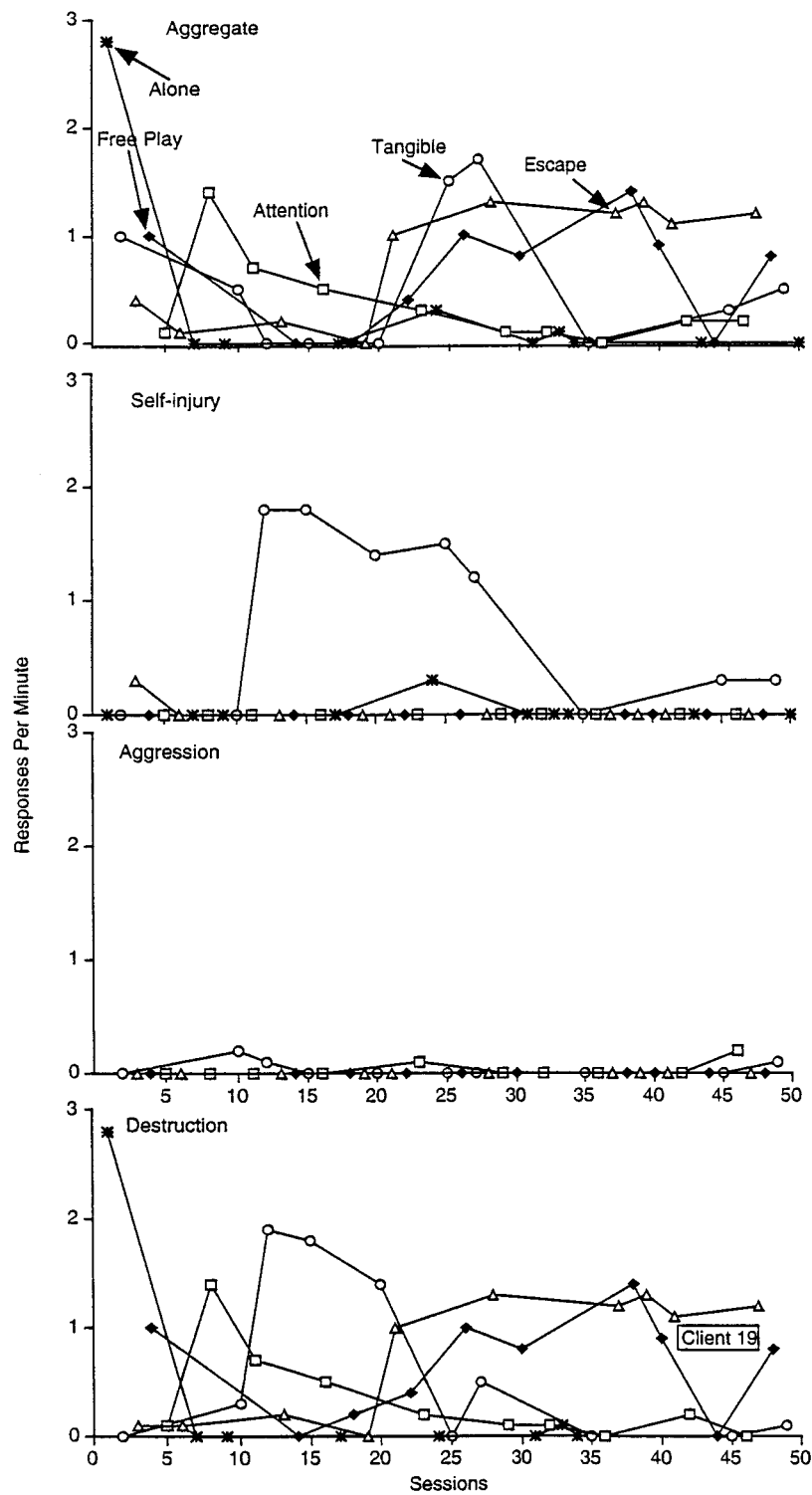


Figure 2. Functional analysis results for Client 19.

functional analysis for at least one topography showed undifferentiated results; thus, a function was not identified.

Our findings suggest that multiple topographies of aberrant behavior in the same individual may be maintained by different reinforcement contingencies. These results provide support for graphic analysis of separate topographies when functional analyses of multiple aberrant behaviors are conducted (Derby et al., 1994). However, the data we provide are still preliminary because (a) the Hagopian et al. (1997) criteria could accommodate a number of multiple-control interpretations, which may have increased the likelihood of mismatched interpretations; (b) more definitive results would have been obtained if separate functional analyses were conducted for each response topography; and (c) the inclusion of treatment data

would have helped to confirm some tentative data interpretations.

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